

A photograph of a nuclear power plant under construction at sunset. Several large lattice-boom cranes are silhouetted against a sky with orange and purple clouds. In the center, a large, rounded containment dome is visible. To the right, another large, dark, rectangular structure is under construction.

Korea's Nuclear Industry

Meeting with U.S. Nuclear Industry at the 59th IAEA GC

September 14, 2015

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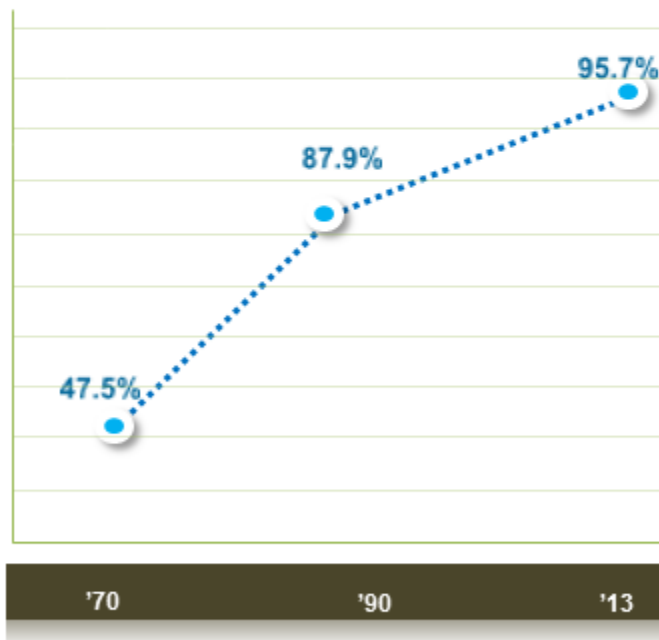
Status of Nuclear Power in Korea



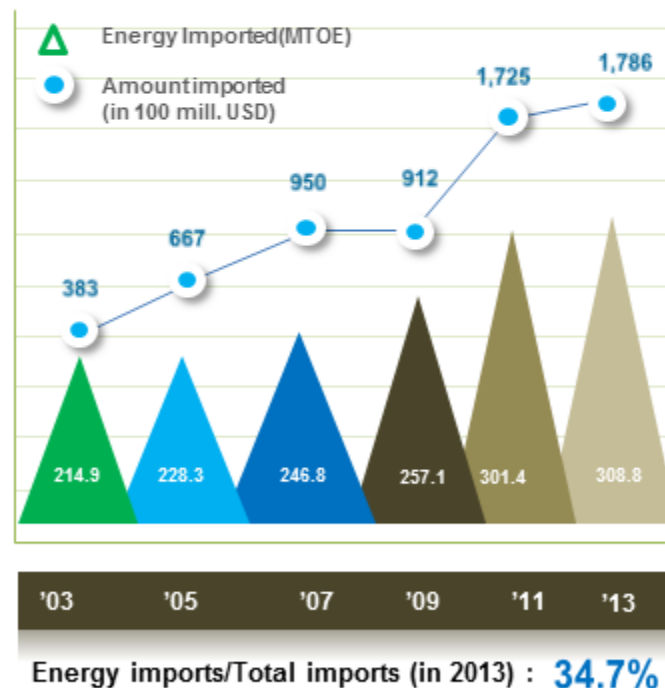
Energy Security

- Overseas dependency has increased to 95.7%
- Korea is an “Energy Island” due to its geopolitical position

Overseas Dependency



Status of Energy Imports



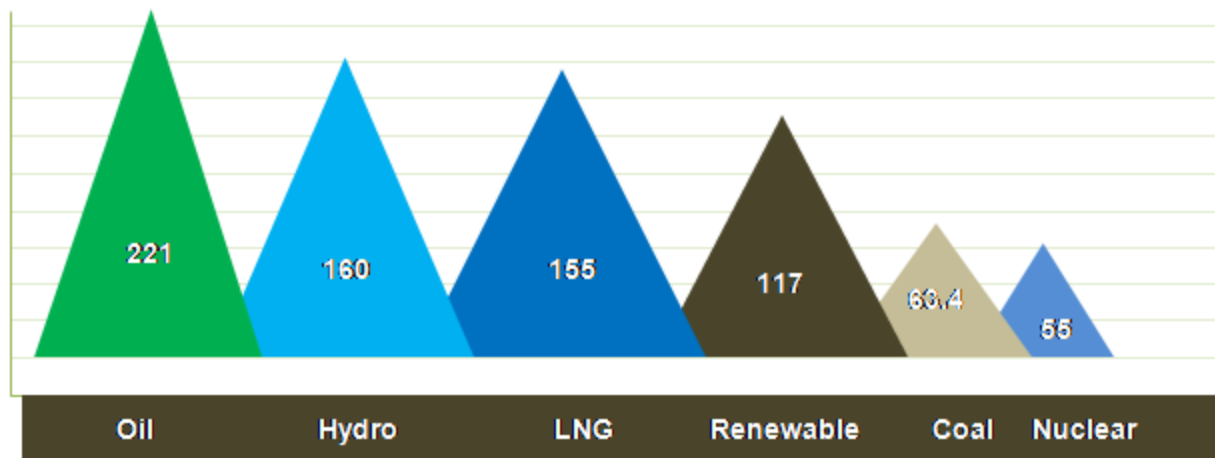
Source : Korea Energy Economics Institute(2014)

Overseas Energy
Dependency is
too high

Cost Competitiveness

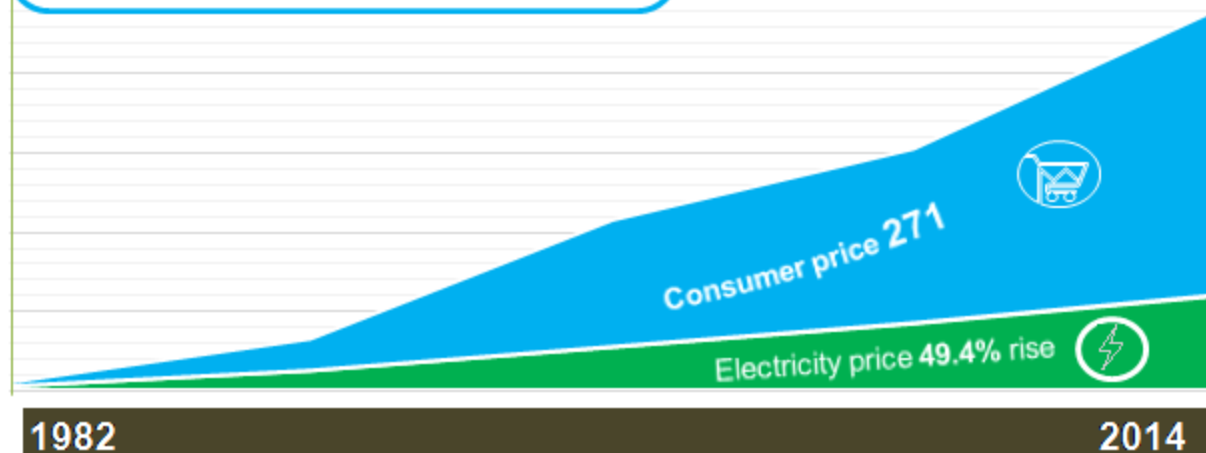
Sale Price (KRW/kWh)

1USD = 1,193KRW (Sep. 4)



Source : Korea Energy Economics Institute(2014)

Contribution to National Economy



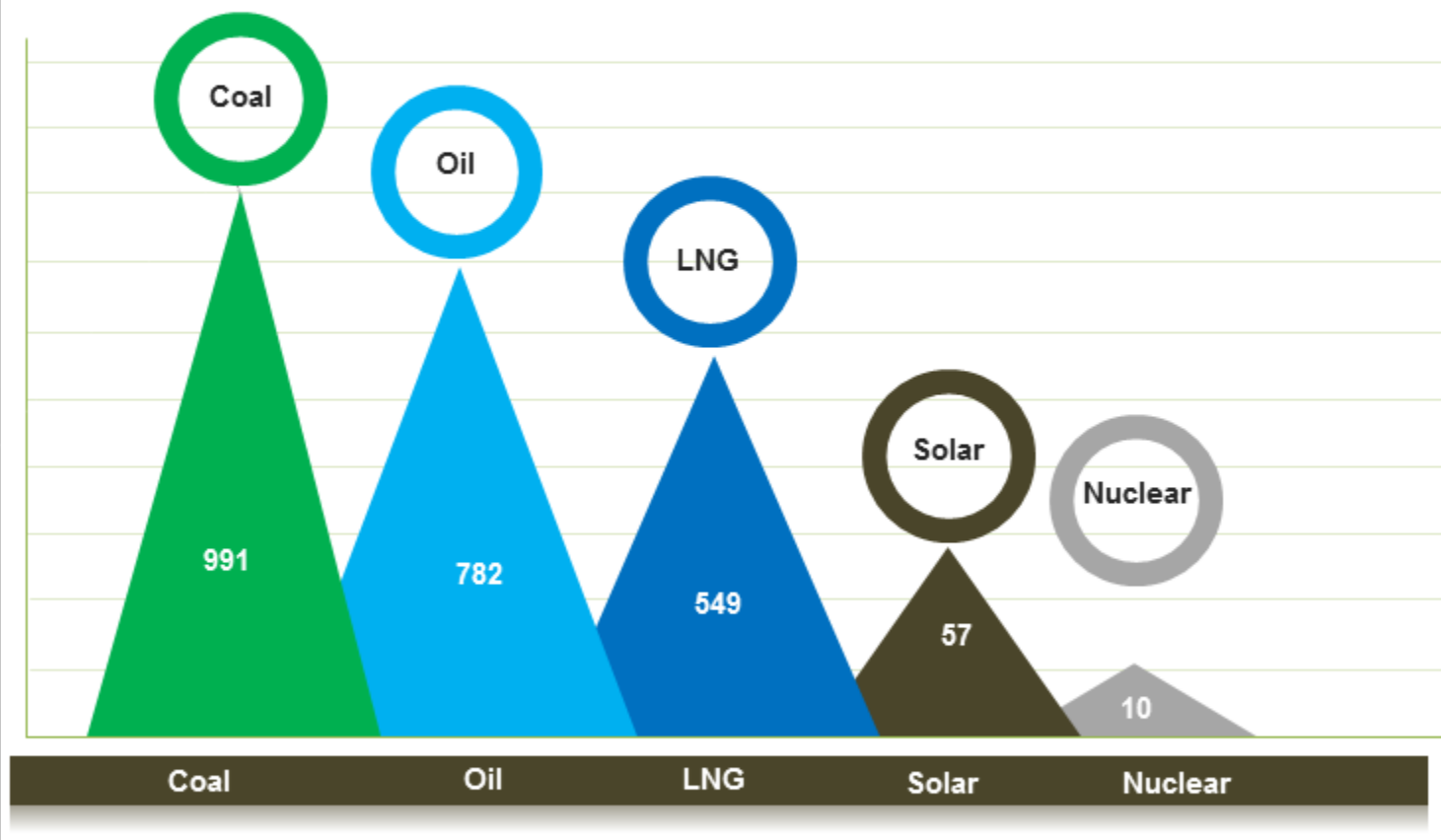
Source : KEPCO (2015)

Nuclear power is the
cheapest and stablest
source in Korea

Eco-friendly Energy

Eco-friendly Energy

(Unit : g/kWh)

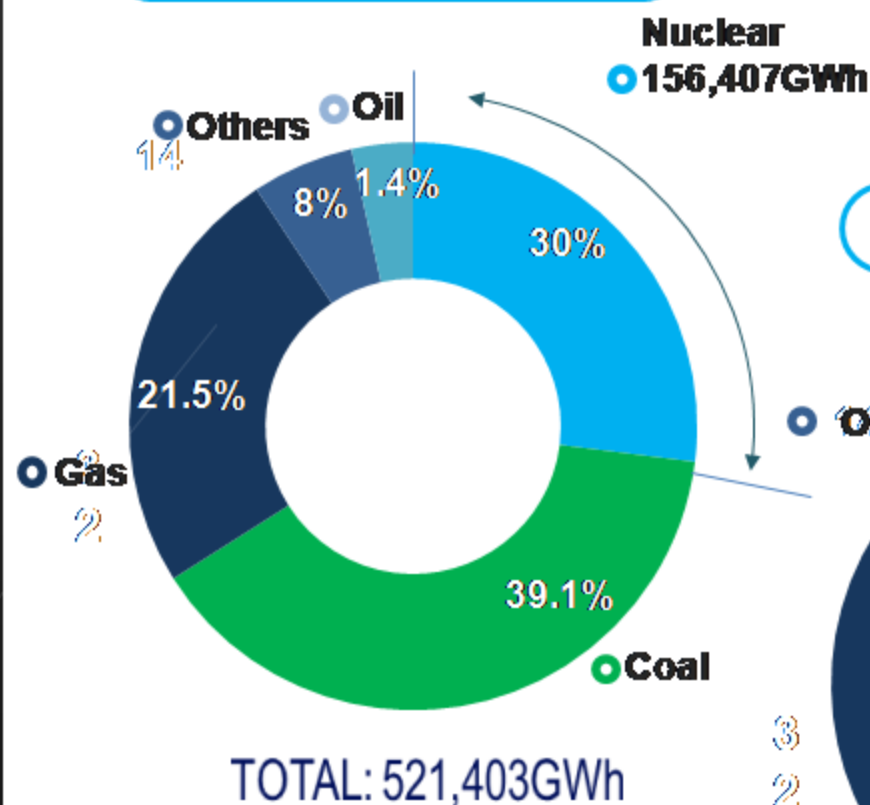


Without nuclear power,
CO₂ emission will
increase by 22% in Korea

Source : IAEA (CO₂ emission by energy)

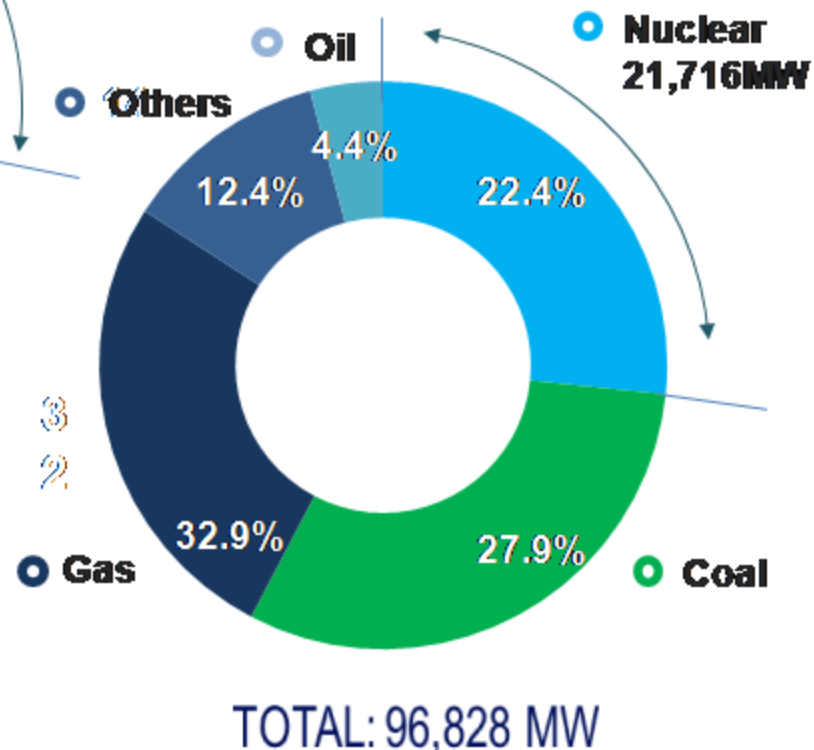
Electricity Mix

Electricity Generation



Source : KEPCO (2014)

Installed Capacity



Source : KEPCO (2015)

Nuclear power accounts
for about 30% of gross
electricity generation

NPPs in Korea

Operation	24 units	21,716MW
Construction	4 units	5,600MW
Planning	8 units	11,600MW



Construction Plan

KOREA



Shin-Kori



2015

Shin-Kori 3

APR1400

2016

Shin-Kori 4

APR1400



Shin-Hanul



2017

Shin-Hanul 1

APR1400

2018

Shin-Hanul 2

APR1400



Cheon-Ji



2026

Cheon-Ji 1

APR+

2027

Cheon-Ji 2

APR+



TBD



2028

TBD

APR+

2029

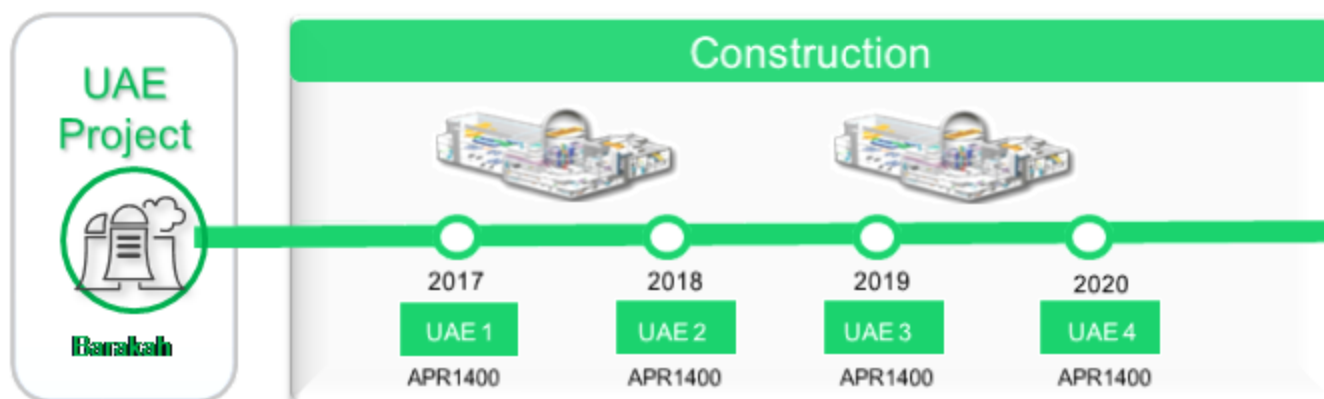
TBD

APR+

Construction

Planning

UAE Project



UAE NPP Project

- Contract : KEPCO ↔ UAE ENEC
- Scale : APR1400 * 4 units(5,600MW)
- Scope : EPC, Operating Support
- COD : #1(May 2017), #2(May 2018)
#3(May 2019), #4(May 2020)

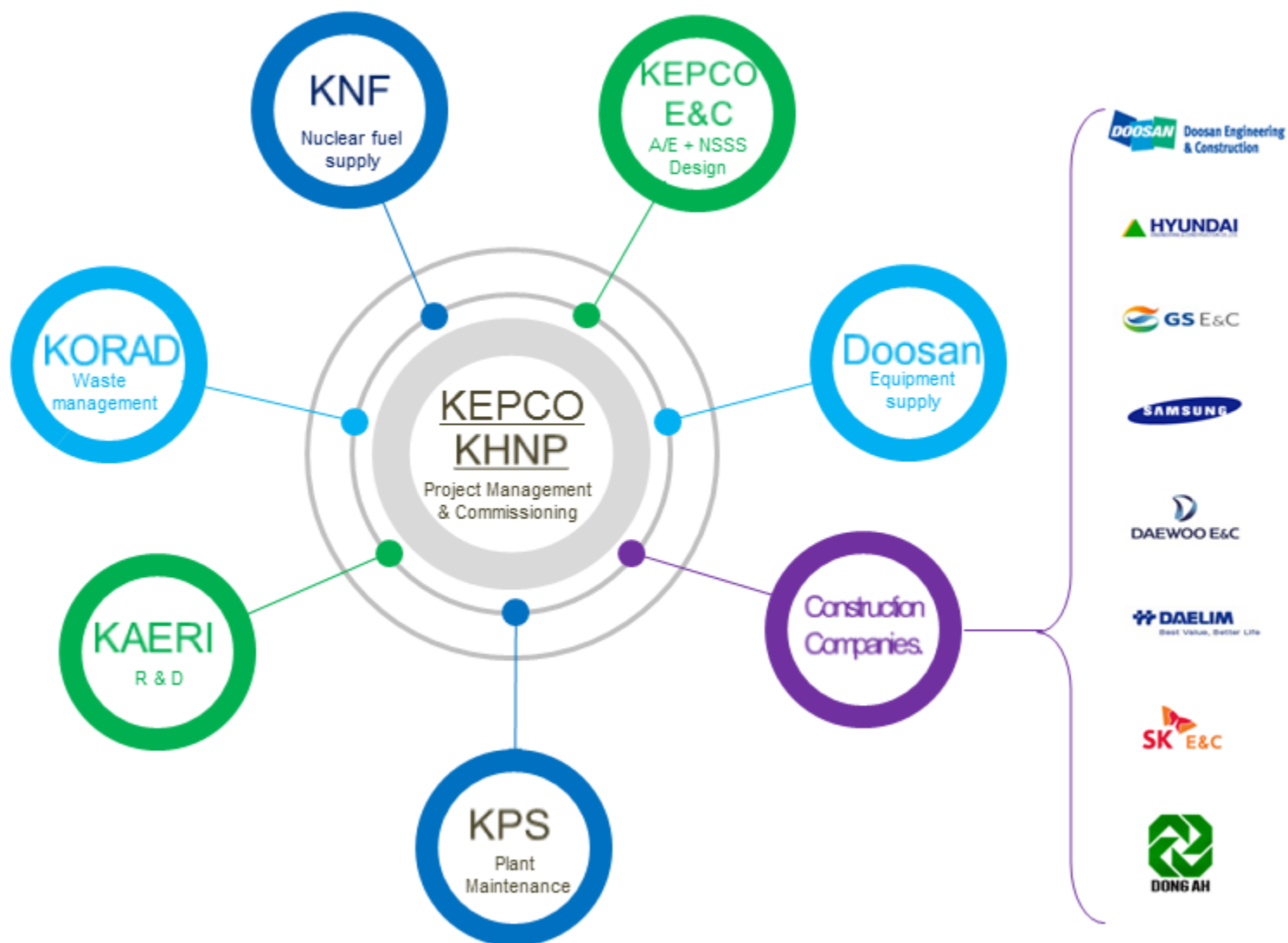
OSSA

(Operating Support Services Agreement)

- Parties : Nawah Energy ↔ KHNP
(ENEC – KEPCO JV)
- Term : 10 years from COD
- Scope : Operating Support and
Technical assistance
- Current status : MOU concluded (Oct.'13)
Under negotiation(Sep.'15)

Korea's Nuclear Industry

Well-organized and
efficient nuclear industry,
working together over
the past four decades

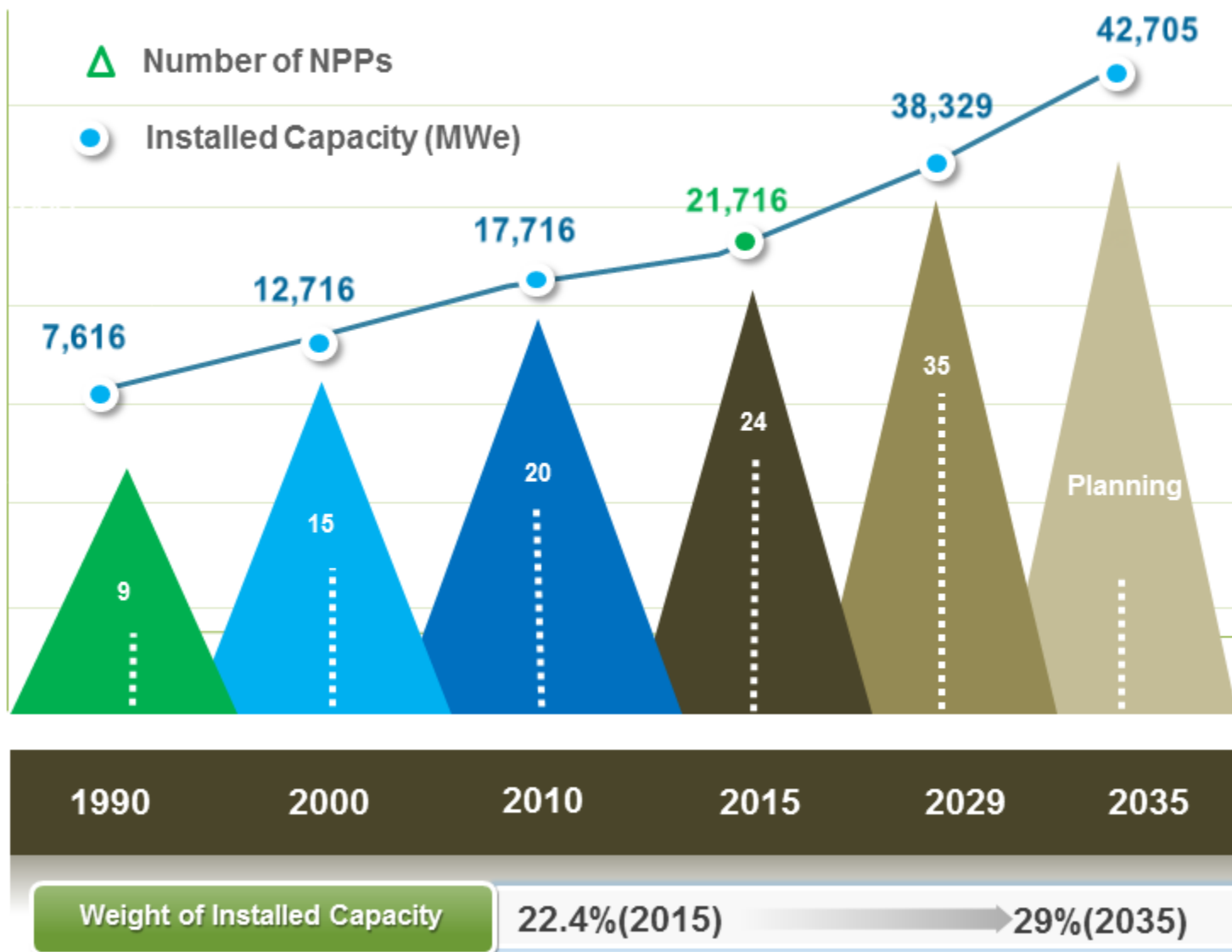


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Long-term Energy Plan



Energy Plan of the Nuclear Industry



Nuclear power generation to 43Gw, installed capacity to 29% by 2035, in the 2nd Nation's Basic Energy Plan

3

The Industry in 2015 At a Glance



Industry Issues in 2015

1 Decision to permanently shutdown Kori1 unit in 2017



2 Public debate regarding spent fuel storage



3 Completion of the 1st Phase of the Radioactive Waste Disposal Facility



- For Low-Level radioactive Waste(LLW) and Intermediate-Level radioactive Waste(ILW)
- Six underground silos(diameter : 24 meter, Capacity : 100,000 barrels)
- ※ There will be 8 phases in this project, (Maximum capacity : 800,000 barrels)

Korea's Nuclear Industry Thriving

Safety First Policy

Expand
Investment
on Safety

Operation/
Equipment
Reliability
Improvement

Safety
Culture
Enhancement



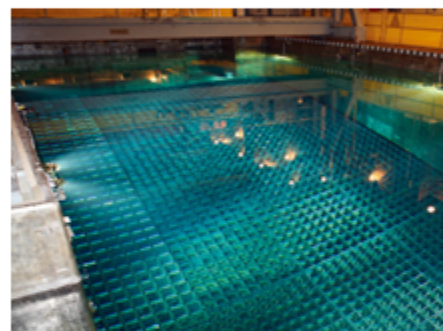
Nuclear
Safety



Waste
Disposal

Radioactive Waste Management

- Established direction to deal with spent fuel
- Reduced radioactive waste storage problem



Recovering Capacity Factor



'09 '10 '11 '12 '13 '14



Plant
Operations



Procurement
& Quality

Integral Procurement & Quality Control

Improving
Transparency
on
Bidding system

Third party
Quality Control
Monitoring

Developing
Supply Chain
Management



Thank You

